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# Sexuality throughout all the stages of pregnancy: Experiences of expectant mothers

Sexualidade durante todas as fases da gravidez: experiências de gestantes  
Sexualidad durante todas las fases del embarazo: experiencia de gestantes

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## Keywords

Pregnancy; Sexuality; Sexual education; Sexual behavior; Qualitative research

## Descritores

Gravidez; Sexualidade; Educação sexual; Comportamento sexual; Pesquisa qualitativa

## Descriptores

Embarazo; Sexualidad; Educación sexual; Conducta sexual; Investigación cualitativa

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## Abstract

**Objective:** To explore and understand the sexual experiences of expectant mothers during their pregnancy.

**Methods:** The study was carried out in two healthcare centers in the Almería Health District, in southern Spain. The participants included pregnant women who received prenatal care and/or maternity education. The inclusion criteria were being pregnant, maintaining sexual activity and agreeing to participate in the study. The exclusion criteria were having limitations on sexual activity by medical prescription. The sample consisted of 15 expectant women selected using a convenience sample, of which 5 took part in a focus group (FG) and 10 in in-depth interviews (ID). Data was collected between the months of June and December 2016. Participants were contacted by the main researcher and an appointment was made to carry out the FGs or the IDs.

**Results:** Three main categories emerged: False beliefs and a holistic approach to sexuality during pregnancy, which is related to the concept of sexuality, false beliefs, and limited sexual counseling during pregnancy. Limitations: From fear at the beginning to physical difficulty at the end, referring to the fluctuations in sexual desire as well as the physical changes that limit sexual activity. Adapting to changes: safe practices and satisfaction with one's body image, which encompasses concerns about the risks and the relationship between body image and self-esteem.

**Conclusion:** A lack of sexual counseling during pregnancy leads to the creation of false beliefs, which, together with physical changes, concerns about the risk, and fluctuations in sexual desire and interest, bring about a decrease in sexual activity. But sexuality remains an important aspect of pregnancy, toward which the participants must adopt a broader approach, not limited to intercourse, and adopt sexual practices that are adapted to the physical and emotional changes that happen during this time.

## Resumo

**Objetivo:** Explorar e compreender as experiências sexuais de gestantes durante a gravidez.

**Métodos:** O estudo foi realizado em dois centros de saúde no Distrito Sanitário de Almería, sul da Espanha. Os participantes incluíram gestantes que receberam atendimento pré-natal e/ou educação para maternidade. Os critérios de inclusão foram estar grávida, manter atividade sexual e concordar em participar do estudo. Os critérios de exclusão foram ter limitações na atividade sexual por prescrição médica. A amostra foi composta por 15 gestantes selecionadas por meio de amostra de conveniência, das quais cinco participaram de grupo focal (GF) e 10 de entrevistas em profundidade (EP). Os dados foram coletados entre os meses de junho e dezembro de 2016. Os participantes foram contatados pelo pesquisador principal e foi realizada uma consulta para conduzir o GF ou EP.

**Resultados:** Três categorias principais emergiram: Falsas crenças e uma abordagem holística da sexualidade durante a gravidez, que está relacionada ao conceito de sexualidade, falsas crenças e aconselhamento sexual limitado durante a gravidez. Limitações: Do medo no início à dificuldade física no final, referindo-se às flutuações no desejo sexual, bem como às mudanças físicas que limitam a atividade sexual. Adaptação às mudanças: práticas seguras e satisfação com a imagem corporal, que engloba preocupações com os riscos e a relação entre imagem corporal e autoestima.

**Conclusão:** A falta de aconselhamento sexual durante a gravidez leva à criação de falsas crenças, que, juntamente com mudanças físicas, preocupações com o risco e flutuações no desejo e interesse sexual, provocam uma diminuição na atividade sexual. Mas a sexualidade permanece um aspecto importante da gravidez, em relação ao qual os participantes devem adotar uma abordagem mais ampla e não limitada ao ato sexual, além de adotar práticas adaptadas às mudanças físicas e emocionais que ocorrem durante esse período.

## Resumen

**Objetivo:** Explorar y comprender las experiencias sexuales de gestantes durante el embarazo.

**Métodos:** Estudio realizado en dos centros de salud del Distrito Sanitario de Almería, Sur de España. Dentro de los participantes se incluyó a gestantes que recibieron atención prenatal y/o educación para la maternidad. Los criterios de inclusión fueron: estar embarazada, mantener actividad sexual y aceptar participar del estudio. Los criterios de exclusión fueron tener limitaciones de actividad sexual por prescripción médica. Muestra compuesta por 15 embarazadas seleccionadas mediante muestra de conveniencia, cinco de las cuales participaron del grupo focal (GF) y 10 de entrevistas en profundidad (EP). Datos recolectados entre junio y diciembre de 2016. Las participantes fueron contactadas por el investigador principal, realizando una consulta para incluirlas en el GF o en el EP.

**Resultados:** Surgieron tres categorías principales: Falsas creencias y un abordaje holístico de la sexualidad durante el embarazo, relacionada al concepto de sexualidad; falsas creencias y asesoramiento sexual limitado durante el embarazo. Limitaciones: Del miedo inicial a la dificultad física al final, refiriéndose a las fluctuaciones en el deseo sexual, así como a los cambios físicos limitantes de la actividad sexual. Adaptación a los cambios: prácticas seguras y satisfacción con la imagen corporal, que incluye preocupaciones con los riesgos y la relación entre imagen corporal y autoestima.

**Conclusión:** La falta de asesoramiento sexual durante el embarazo lleva a crear falsas creencias, que, conjuntamente con los cambios físicos, preocupaciones por riesgos y fluctuaciones del deseo e interés sexual, provocan una disminución de la actividad sexual. Pero la sexualidad continúa siendo un aspecto importante del embarazo, respecto del cual los participantes deben adoptar un abordaje más amplio y no limitado al acto sexual, además de adoptar prácticas adecuadas a los cambios físicos y emocionales típicos del período.

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Introduction

Gestation is the period that takes place between fertilization and childbirth, which causes physical, hormonal, emotional, psychological, social, and sexual changes in a woman.<sup>(1,2)</sup> As a result, pregnancy generates expectations and doubts about being able to deal with these changes and respond to this new situation.<sup>(3)</sup> In addition, pregnancy generates positive feelings, such a joy, but at the same time, negative feelings, such as depression,<sup>(4)</sup> fear and anxiety,<sup>(5)</sup> that can have negative repercussions on the expectant woman and her partners' sex life.<sup>(6)</sup> Along with the decrease in sexual desire, warnings about sex or limitations<sup>(7)</sup> and the fear of physically hurting the fetus,<sup>(8)</sup> can make pregnancy a period of low sexual activity. Expectant mothers have needs, doubts and concerns about their sexuality<sup>(8)</sup> that should be addressed during their prenatal care and education.<sup>(9)</sup>

Fluctuations in desire and sexual practices are normal throughout pregnancy<sup>(2,10)</sup> and post-partum.<sup>(11)</sup> In the first trimester, physical and emotional changes lead a a decrease in the frequency of sexual relations and sexual desire.<sup>(12)</sup> In the second trimester, sexual desire tends to come back,<sup>(13)</sup> associated with an improvement in an expectant mother's physical wellbeing,<sup>(14)</sup> less fear of losing the fetus,<sup>(15)</sup> better vaginal lubrication and ease of intercourse.<sup>(3)</sup> In the third trimester, physical limitations due to body size and shape and the pressure on the uterus limit sexual activity.<sup>(10,12)</sup> Although many studies focus on subjects such as reproductive health, miscarriage,<sup>(16)</sup> sexual education from a preventive standpoint<sup>(17,18)</sup> and the biological aspects of sexuality during pregnancy,<sup>(3)</sup> there is a lack of research about the subjective, emotional and experiential dimension of women during this period.<sup>(11)</sup>

The aim of this study is to explore and understand the sexual experiences of expectant mothers during their pregnancy.

Methods

Our study is a qualitative study based on Gadamer's hermeneutic phenomenology. Gadamer tells us

that understanding a phenomenon is conditioned by the present, traditions, and history.<sup>(19)</sup> Our own experience creates prejudices which help subjects to understand themselves in their own context. Therefore, understanding and interpreting the narration of participants' experience involves a fusion of horizons between the interpreter's and participants' horizons.

The study was carried out in two healthcare centers in the Almería Health District, in southern Spain. The participants included pregnant women who received prenatal care and/or maternity education. The inclusion criteria were being pregnant, maintaining sexual activity and agreeing to participate in the study. The exclusion criteria were having limitations on sexual activity by medical prescription.

The sample consisted of 15 expectant women selected using a convenience sample, of which 5 took part in a focus group (FG) and 10 in in-depth interviews (IDI). Their sociodemographic data can be seen in table 1.

Table 1. Sociodemographic data of the participants (n=15)

Participant	Age	Weeks pregnant	Profession	Education level
FG-1	30	26	Accounting advisor	College
FG-2	28	32	Student	Vocational training
FG-3	31	36	Teacher	College
FG-4	35	32	Doctor	University
FG-5	27	24	Homemaker	High school
IDI-1	38	34	Clinical Psychologist	Master's
IDI-2	38	30	Economist	College
IDI-3	30	23	Teacher	University
IDI-4	31	30	Businesswoman	College
IDI-5	30	39	Teacher	College
IDI-6	34	40	Biologist	College
IDI-7	31	36	Waitress	High school
IDI-8	28	37	Psychologist	College
IDI-9	31	20	Student	Vocational training
IDI-10	34	28	Homemaker	Vocational training

FG - Participant in a Focus Group. IDI - In-depth Interview

Data was collected between the months of June and December 2016. Participants were contacted by the main researcher and an appointment was made to carry out the FGs or the IDIs. Before starting the conversation, the researcher reiterated the objectives of the study, informed participants about ethical issues, and asked for permission to record the conversation. The FG lasted 70 minutes and it was held in

a room in the health center where the patients went to maternity education. The moderator had an interview script that started with the question: “Tell me how your pregnancies are going,” and later asked questions about their sexual experiences.

The IDIs were carried out at the participants’ homes. The interview script was modified in order to dig deeper into more personal subjects that barely came up in the FG. When the interviewer perceived that the interviewees were comfortable with the questions being asked, she formed questions related to more intimate sexual activity, such as: “Tell me about the positions that prove to be most comfortable for you.”

The recordings were transcribed by the interviewers immediately after finishing the FG and IDIs. When the researchers deemed that data saturation was reached, when new topics no longer emerged, they decided to conclude data collection. For the analysis, the following steps were followed, which are used in phenomenological research.<sup>(20)</sup>

Phase 1. Verifying the coherence between the question and the research method. Sexuality during pregnancy is a phenomenon of the life-world which it is possible to have experience in.

Phase 2. Identifying the pre-understanding of the researchers, derived from their clinical or research experience.

Phase 3. Gaining understanding through dialog with the participants. During the interviews, a spontaneous understanding was obtained, through what the participants shared, notes were taken and clarifying questions were also formulated.

Phase 4. Gaining understanding through dialog with the text (analysis). The researchers thoroughly read through the transcriptions and developed a general impression of the experiences. In this phase of the analysis, ATLAS-Ti software was used. (Version 8.0, Thomas Muhr, Berlin, Germany).

- The meaning of each sentence was analyzed and codified through an inductive analysis. This revealed units of meaning, subcategories and categories.
- As a consequence of moving from the text as a whole to its individual parts and from each part to the whole (hermeneutic circle), new

questions arose throughout the interpretation of the data.

- Aiming to go beyond mere descriptions, the relationship between the themes and subthemes was established (pragmatic level).

Phase 5. Credibility was obtained by ensuring that all the participants’ points of view were reflected. To reach confirmability, the transcriptions and the final list of categories and quotes were confirmed by the participants.

Participation was voluntary, anonymous and allowed after having signed an informed consent form. Participants were informed that they had the option to not respond to certain questions and that they could stop the interview process at any time, as well as that their conversations would be recorded for later transcription. The study was approved by the Research Ethics Committee of the health district where data collection took place (2015-01/08).

## Results

During the analysis process, 48 units of meaning, six subcategories, and three categories emerged. They reflected the perceptions of expectant mothers about their sexual experience during their pregnancy (Chart 1).

**Chart 1.** Categories, subcategories and units of meaning, resulting from the analysis

Categories	Subcategories	Units of meaning
False beliefs and a holistic approach to sexuality during pregnancy	False beliefs and advice during the pregnancy	Safety, information about positions during pregnancy, self-reporting, risk of miscarriage, fear of losing the fetus, giving in to pressure, moral limitations, uncertainty with their partner, harmful sex.
	Towards a broader concept of sexuality	Initiating the sexual act, broad concept, masturbation, other acts besides penetration, sexuality being important, relating to sex, intimacy with partner, erotic games.
Limitations. From fear at the beginning to physical difficulty at the end.	Fluctuations in sexual interest and desire	Fetal wellbeing, abstinence, stress, signs, being kind, discomfort, work, intensity, time, children.
	Physical changes that limit traditional sexual activity	Uncomfortable positions, lack of independence in certain movements, body size.
Adaptation to changes: safe practices and satisfaction with one's body image.	Concern about the risk and finding helpful positions	Intercourse, orgasm, Andromache position, comfortable position, oral sex, “69”, intercourse from behind, penetration from behind, sideways position, heavy petting, tenderness.
	Relationship between body image and self-esteem. Feeling attractive and pampered	Feeling attractive, protective husband, body image, self-image, cuddling/pampering, thoughtful husband, loving, vaginal lubrication, smooth skin.



### **False beliefs and a holistic approach to sexuality during pregnancy**

The participants hold false beliefs about sexuality during pregnancy, stemming from the absence of sexual education they receive during this period, which makes them unable to fully enjoy their sexuality throughout this time. At the same time, they take on a broad, holistic approach to sexuality, which makes adapting to the new limitations of the situation easier to handle.

### **False beliefs and the absence of sexual counseling during pregnancy**

This subcategory refers to the mistaken ideas about the risks that sexual relations may entail during pregnancy. Guided by such beliefs, participants adopt fearful or hyper-protective attitudes that result in a decrease in the quantity and quality of their sexual relations. For example, some participants expressed that their partner was fearful and insecure about having sex with full penetration for fear of hurting the expectant mother and/or the fetus.

[...] my husband was hesitant, because he thought it was going to affect the baby (IDI-6).

[...] my partner..., I get the feeling that he is scared of hurting me and the baby (FG).

This fear was also common among the women, who expressed that they experienced fear of miscarriage, due to widespread false beliefs that are shared through advice from friends and acquaintances.

[...] they tell you that you have to be more careful with everything, because you could have a miscarriage in the first months. At that time, I was more scared, so I avoided doing it (IDI-2).

These false beliefs also generate hyper-protective behavior in the male partner, which can be interpreted either as a show of love or affection, or as over-zealous behavior that invalidates the pregnant woman as a person.

[...] he says, when I'm cleaning, that I should stop, that he'll do it. [...] I tell him that I'm not sick, I'm not an invalid; sometimes it even makes me feel useless (IDI-8).

These false beliefs could be related to the lack of sexual counseling in the maternity education sessions. For our participants, the sexual guidance

that they received was scarce and they felt embarrassed asking about it, and thus, they turned to the Internet for information:

[...] I read about it on the Internet, which all of us know is sometimes not... (trustworthy). But the doctor didn't tell me anything about it (FG).

Some participants alleged that they didn't bring up the sexual topic because of moral reasons. Even nowadays many people consider it controversial to speak openly about sexuality, which is the reason why neither the patients nor health professionals bring it up:

Yeah, it probably would have been necessary, but, even today, in the society we live in, talking about that is not socially acceptable (FG).

### **Towards a broader concept of sexuality**

Despite these widespread false beliefs, sexuality is considered by the participants as a very valuable thing, and they prioritize taking a broad approach and holistic understanding of the word, which goes beyond mere intercourse, but not excluding it either.

[Sexuality] is a very comprehensive thing, it doesn't have to do only with penetration. I don't know..., erotic games, penetration too, of course (FG).

Intimacy, autoeroticism (self-stimulation), masturbation and erotic games are not seen as an intermediate means to an end, rather, as pleasurable activities in themselves, that don't necessarily have to lead to intercourse.

I understand sexuality as..., seduction, flirting from the very beginning on, risqué lines you say to your husband, [...] (FG).

### **Limitations: From fear at the beginning to physical difficulty at the end**

The participants pointed out certain limitations on sexual relations throughout their pregnancy. These are related to fluctuations in interest and sexual desire throughout the different stages of pregnancy, and to the physical limitations that stem from typical first-trimester symptoms (nausea, vomiting) at the beginning to the increase in body size at the end.

## Fluctuations in sexual interest and desire

As the pregnancy progresses, we can see cases of abstinence and a decrease in sexual interest, which is shown, in the majority of our participants, in the first trimester.

[...] The first three months, I never really felt like it, but he did want to (FG).

On the other hand, some women explained that, in the second trimester, after their initial fear subsided, but before their physical limitations made it more difficult, they saw an increase in their sex drive:

[...] in the second trimester I did want to do it often...There's a certain time in which I feel like initiating more often than normal (IDI-3).

Once they are in their third trimester, the participants experienced feelings of pain and tension, factors that could lead to a decrease in their sex drive.

Right now, at 39 weeks..., I don't have sexual relations with penetration because it hurts, it hurts down below (IDI-10).

## Physical changes that limit traditional sexual activity:

Among the physical changes that women undergo, we can find changes in the woman's body, which do not allow her and her partner to find a comfortable position in the third trimester, and other symptoms, such as nausea and vomiting during the first trimester, which also limit or hinder sexual relations during the pregnancy.

[...] now I only can do it in certain positions, I don't feel comfortable anymore in certain positions, I'm really limited with my belly being so big. (IDI-1).

At first, I only ever felt nauseated and like I was about to vomit, and I was sick all the time, (...). So, you can imagine, nothing at all, you are just barely getting by (FG).

## Adapting to changes: safe practices and satisfaction with one's body image

Maintaining an active sex life in spite of the physical changes and the limitations caused the participants to undergo an adaptation process, based on looking for safe practices and comfortable positions. Also, the changes in their bodies caused greater satisfaction with their own body image.

## Concerns about the risk and finding a comfortable position

Our participants explained that as their bellies grow, they look for adaptation through trying different (new) and more conducive sexual positions (woman on top, from behind and a sideways lying position). In this way, the increase in belly size does not avoid enjoying the intercourse:

With him lying down and me on top, because I'm scared of him putting pressure on me, (...) and if I'm on top, I can control it more so there is no pressure on my belly (IDI-7).

Oral sex was considered a risky sexual practice by some of the participants, who associated it with the possibility of catching oral infections and the consequent risk of miscarriage. Because of this, it is a practice that they avoid:

[...] we avoid oral sex lately, because of the risk...of infection or something, right? (...) even though I like it, I can live without it, I wouldn't want anything to happen from just a little sore in his mouth or something..., I don't want to take any risks (IDI-9).

Touching, kissing, and regular affection became the preferred sexual practice of many of the women, above any sexual practice more focused on the genitalia:

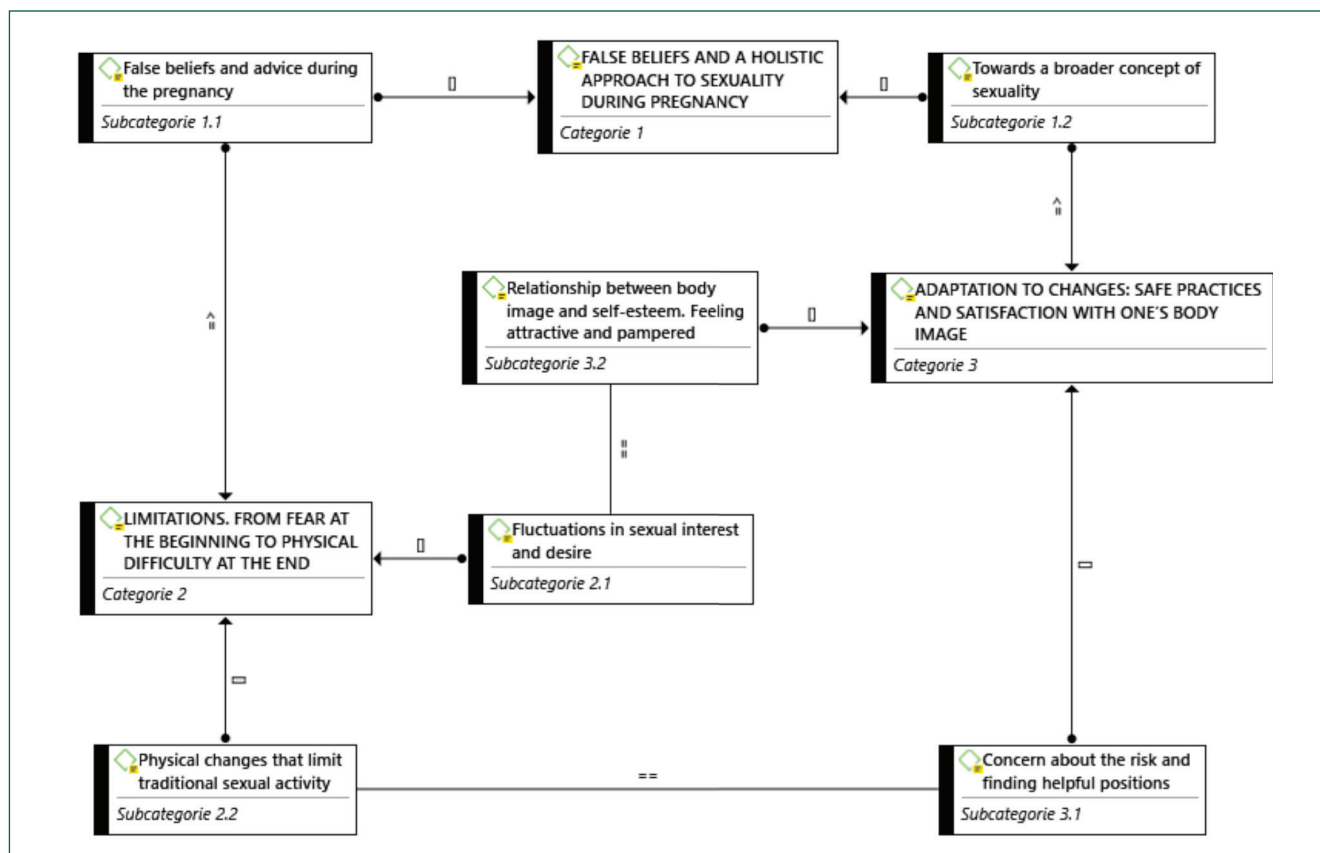
Now we look more for that, (...) to be hugged, kissed, to hear compliments and be told how beautiful we are, we don't go looking for that (penetration) (FG).

## The relationship between body image and self-esteem. Feeling attractive and pampered

The physical changes that take place during pregnancy, also contribute to an increase in a woman's satisfaction with her body image, as she feels attractive and pampered by her partner, which generates an increase in self-esteem:

I like to see myself with my belly, wearing maternity clothes (...). I feel good in my own skin, and feel good about my pregnancy (IDI-3).

I find him more loving, and I can tell that with certain things he's more caring, I mean, Before, he didn't pay much attention to chores and to my things, but now he does (IDI-5).



Key: □ Is a part of. == Related to. ==> Contributes to. Prepared by the authors with ATLAS.Ti 8 software

**Figure 1.** Conceptual map created to show the relationships between categories and subcategories that emerged from the analysis

From the analysis of the relationships between the different categories (pragmatic level of analysis) a concept map was created (Figure 1). It represents how false beliefs contribute to the appearance of limiting factors that inhibit sexual activity in the initial stages of pregnancy. In more advanced stages, physical changes contribute to these limitations. A broad concept of sexuality, satisfaction with one's body image, and the search for comfortable positions that make it easier are all part of adapting to such changes, so that safe and satisfactory sexual activity can be maintained throughout the pregnancy.

## Discussion

The main limitations in this study are related to the sample, since the majority of the participants have higher education degrees and planned pregnancies. All of them are young adults and we did not have adolescents nor women over 40 years old in our

sample. The inclusion of a more varied sample may have yielded different results.

Including sexual health in the clinical evaluation of expectant mothers and sexual education in maternity (and paternity) education, could contribute to more fulfilling, satisfactory and unprejudiced sexual relations during pregnancy. Midwives and nurses that working with pregnant women and their partners should provide information about sexual activity during pregnancy.

In this study, sexual difficulties and issues related to pregnancy emerged. These have their base in limited sexual education, false beliefs, and myths that can have adverse effects on the relationship between the parents-to-be.<sup>(9)</sup> As in other studies,<sup>(21,22)</sup> beliefs that are socially and culturally accepted result in fears that have a negative impact on the sexuality of the expectant woman. Although some studies suggest that the connection between a couple does not change during pregnancy,<sup>(23)</sup> our participants confirmed that their partners expressed

concerns about intercourse. They fear hurting the fetus, which denotes a protective attitude.<sup>(24)</sup>

Our participants reported that the sexual education they received on behalf of health professionals was limited, and that many only received such information if they asked for it specifically, and noted that the information was also lacking in detail. Sexuality is not usually included in health professionals' agendas<sup>(20,25)</sup> nor in prenatal education programs.<sup>(25)</sup> Concurring with other studies, our participants resorted to friends or the Internet for information.<sup>(24)</sup> Some authors suggest that it should be the health professionals who advise pregnant women about psychosexual changes that take place during pregnancy.<sup>(11)</sup> Others have emphasized the importance of teaching sexual health interview skills in the undergraduate and continuing education of health professionals.<sup>(25,26)</sup>

Pregnancy significantly reduces a woman's sexual function, especially in the first and third trimesters,<sup>(12,27,28)</sup> and our study also found a marked decrease in sexual activity, especially intercourse, during these periods, due to fear and physical difficulties. On the other hand, the participants expressed an increase in self-esteem during the second trimester, linked to satisfaction with the changes their bodies were undergoing, which made them feel attractive and wanted. This reflects what was found in other studies, which found a positive correlation between self-esteem and satisfaction in sexual relations during and after the transition into maternity.<sup>(29)</sup> Nonetheless, other studies have showed that the higher the body mass, the lower satisfaction a woman has with her body image, regardless of whether she is pregnant or overweight for other reasons.<sup>(30)</sup> This suggests that it is not the pregnancy in itself but the excess weight in the third trimester that has a negative effect on sexual function.<sup>(31)</sup>

## Conclusion

The absence of sexual counseling during pregnancy gives rise to false beliefs, which, together with physical changes, concerns about the risks, and fluctuations in sexual interest, cause a decrease in sexual

activity. Nonetheless, sexuality remains an important aspect of pregnancy, toward which the participants must adopt a broader approach, not limited to intercourse, and adopt sexual practices that are adapted to the physical and emotional changes that happen during this time.

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## Collaborations

Fernández-Sola C was responsible for the study design. Huankara-Kana D, Carmona-Samper E and López-Rodríguez MM performed the data collection. Granero-Molina J and Hernández-Padilla JM planned and carried out the analysis and interpretation of the results. Fernández-Sola C, Granero Molina J and Huankara Kana D drafted the manuscript and Hernández-Padilla JM, Carmona-Samper E and López Rodríguez MM revised it critically. All authors checked the manuscript for accuracy and completeness.

## References

1. Yeniel AO, Petri E. Pregnancy, childbirth, and sexual function: perceptions and facts. *Int Urogynecol J Pelvic Floor Dysfunct.* 2014;25(1):5–14.
2. Ninivaggio C, Rogers RG, Leeman L, Migliaccio L, Teaf D, Qualls C. Sexual function changes during pregnancy. *Int Urogynecol J Pelvic Floor Dysfunct.* 2017;28(6):923–9.
3. Alsibiani SA. Effects of pregnancy on sexual function. Findings from a survey of Saudi women. *Saudi Med J.* 2014;35(5):482–7.
4. Lima MO, Tsunechiro MA, Bonadio IC, Murata M. Depressive symptoms in pregnancy and associated factors: longitudinal study. *Acta Paul Enferm.* 2017;30(1):39–46.
5. Silva MM, Nogueira DA, Clapis MJ, Leite EP. Anxiety in pregnancy: prevalence and associated factors. *Rev Esc Enferm USP.* 2017;51:e03253.
6. Anzaku SA, Ogbu EA, Ogbu GI, Edem BE, Ngwan SD. Evaluation of changes in sexual response and factors influencing sexuality during pregnancy among Nigerian women in Jos, Nigeria. *Int J Reprod Contracept Obstet Gynecol.* 2016;5(10):3576–82.



7. Saeteros C, Piñero IC, Saeteros Hernández RC, Pérez Piñero CJ, Sanabria Ramos CG. [Sexuality experiences of university students]. *Rev Cuba Salud Pública*. 2013;39(5):915–28. [Spanish].
8. Vieira TC, de Souza E, Nakamura MU, Mattar R. [Sexuality in pregnancy: are Brazilian physicians prepared to conduct these questions?]. *Rev Bras Ginecol Obstet*. 2012;34(11):485–7. Portuguese.
9. Alkaabi MS, Alsenaidi LK, Mirghani H. Women's knowledge and attitude towards pregnancy in a high-income developing country. *J Perinat Med*. 2015;43(4):445–8.
10. de Pierrepont C, Polomeno V, Bouchard L, Reissing E. [What do we know about perinatal sexuality? A scoping review on sexoperinatality - Part 2]. *J Gynecol Obstet Biol Reprod (Paris)*. 2016;45(8):809–20. French.
11. Kim HM, Geraghty S. 'Yummy Mummies': exploring sexuality in the antenatal and postnatal period. *Pract Midwife*. 2016;19(6):24–6.
12. Corbacioglu Esmer A, Akca A, Akbayir O, Goksedef BP, Bakir VL. Female sexual function and associated factors during pregnancy. *J Obstet Gynaecol Res*. 2013;39(6):1165–72.
13. Ahmed MR, Madny EH, Sayed Ahmed WA. Prevalence of female sexual dysfunction during pregnancy among Egyptian women. *J Obstet Gynaecol Res*. 2014;40(4):1023–9.
14. Colson MH. [Female sexuality and parenthood]. *Gynécob Obstét Fertil*. 2014;42(10):714–20. French.
15. Yildiz H. The relation between prepregnancy sexuality and sexual function during pregnancy and the postpartum period: a prospective study. *J Sex Marital Ther*. 2015;41(1):49–59.
16. Jayaweera RT, Ngui FM, Hall KS, Gerdts C. Women's experiences with unplanned pregnancy and abortion in Kenya: A qualitative study. Danga G, editor. *PLoS One*. 2018; 13(1):e0191412.
17. Ethier KA, Kann L, McManus T. Sexual intercourse among high school students — 29 states and United States Overall, 2005–2015. *MMWR Morb Mortal Wkly Rep*. 2018; 66(51-52):1393–7.
18. Elliot LM, Booth MM, Patterson G, Althoff M, Bush CK, Dery MA. Association of state-mandated abstinence-only sexuality education with rates of adolescent hiv infection and teenage pregnancy. *J La State Med Soc*. 2017;169(2):56.
19. Gadamer HG. *Truth and method*. London: Bloomsbury Academic; 2013.
20. Granero-Molina J, Matarín Jiménez TM, Ramos Rodríguez C, Hernández-Padilla JM, Castro-Sánchez AM, Fernández-Sola C. Social Support for Female Sexual Dysfunction in Fibromyalgia. *Clin Nurs Res*. 2018;27(3):296–314.
21. Carteiro D, Marques AM. [Pregnancy and its impact on the sexuality of future parents.] *Saúde Reprod Sex Soc*. 2013; 3:45–55. Portuguese.
22. Thomas Farrell C, Clyde A, Katta M, Bolland J. The impact of sexuality concerns on teenage pregnancy: a consequence of heteronormativity? *Cult Health Sex*. 2017;19(1):135–49.
23. Okada MM, Hoga LA, Borges AL, de Albuquerque RS, Belli MA, Okada MM, et al. Domestic violence against pregnant women. *Acta Paul Enferm*. 2015;28(3):270–4.
24. Liu HL, Hsu P, Chen KH. Sexual Activity during pregnancy in Taiwan: a qualitative study. *Sex Med*. 2013;1(2):54–61.
25. Vieira TC, Nakamura MU, da Silva I, Torloni MR, Ribeiro MC, Scanavino MT, et al. Experience of an online course on sexuality during pregnancy for residents. *Sex Reprod Healthc*. 2017;12:76–81.
26. Alexander SC, Christ SL, Fortenberry JD, Pollak KI, Østbye T, Bravender T, et al. Identifying types of sex conversations in adolescent health maintenance visits. *Sex Health*. 2016;13(1):22–8.
27. Aydin M, Cayonu N, Kadihasanoglu M, Irkilata L, Atilla MK, Kendirci M. Comparison of sexual functions in pregnant and non-pregnant women. *Urol J*. 2015;12(5):2339–44.
28. de Pierrepont C, Polomeno V, Bouchard L, Reissing E. [What do we know about perinatal sexuality? A scoping review on sexoperinatality - part 1]. *J Gynecol Obstet Biol Reprod (Paris)*. 2016;45(8):796–808. French.
29. van Scheppingen MA, Denissen JJ, Chung JM, Tambs K, Bleidorn W. Self-esteem and relationship satisfaction during the transition to motherhood. *Pers Soc Psychol*. 2018 Jun;114(6):973-991.
30. Shloim N, Hetherington MM, Rudolf M, Feltbower RG. Relationship between body mass index and women's body image, self-esteem and eating behaviours in pregnancy: a cross-cultural study. *J Health Psychol*. 2015;20(4):413–26.
31. Ribeiro MC, Nakamura MU, Torloni MR, Scanavino MT, Mancini PE, Forte BM, et al. Maternal overweight and sexual function in pregnancy. *Acta Obstet Gynecol Scand*. 2016 ;95(1):45–51.